

Spatial Analysis about The Adjustment of NJOP Based on Assessment Ratio in Bandung (Study Case : Subdistrict Ujung Berung)

(Andri HERNANDI, Alfita PUSPA HANDAYANI, Atifah RABBANI)

Key words: Adjustment, Assessment Ratio, Land, Price, Market, Tax , Cadastre

SUMMARY

Bandung's growth rate is increasing rapidly and its tremendous development requires a higher development cost. Revenue stream for regional's development comes from Local Government Original Receipt (LGOR) and Balancing Funds (BF). Due to the fact that government can only maintain and maximizing the LGOR, in order to fulfilled the needs of the development cost, there should be an effort to raising the income from PBB and BPHTB, because they give around 50% part to LGOR.

Income from PBB and BPHTB is about stagnant even though the land price in Bandung is constantly increasing. Therefore, the difference between market land price and land tax get even bigger. This gap is called Assessment Ratio (AR) and the good AR in development country is around 70%. If the value is smaller than that, there should be an adjustment either for the market land price or the land tax to shrink the value of AR. In Bandung, it is more possible to increase the Nilai Jual Objek Pajak (NJOP) as the basic value of land tax because Indeks Daya Beli (IDM) is increasing from year to year.

Since there are no research about the AR pattern in Bandung before, firstly it is important to reveal the fact about AR pattern. After that, the adjustment of AR in Bandung is being done by increasing the value of NJOP by mathematical methods using spatial analysis and GIS to count the ideal AR. The value is further can be used to be applied in Bandung for a better income and development. This research used Ujung Berung as a study case since it is being planned as an area that will be developed and the final result is 20% increasing value of NJOP is the best adjustment to get the nice AR.

SUMMARY

Bandung tengah mengalami perubahan bersejarah dan menjadi ekonomi perkotaan. Untuk menyelenggarakan berbagai pembangunan tersebut, Penyelenggaraan kegiatan pemerintahan daerah senantiasa terus meningkat sehingga biaya yang dibutuhkan juga akan bertambah. Untuk meningkatkan pelayanan dan pembangunan, dibutuhkan biaya yang tidak sedikit. Saat ini sumber pendanaan Bandung terbagi menjadi Pendapatan Asli daerah (PAD) dan Dana Perimbangan dari pusat secara garis besar dengan PBB dan BPHTB sebagai pemberi dana terbesar yaitu sekitar 50%.

Meningkat pendapatan dari PBB dan BPHTPB cenderung stagnan meskipun harga pasar terus meningkat sehingga mencintapkan kesenjangan yang semakin besar. Perbandingan antara NJOP dengan harga pasar disebut Assessment Ratio (AR) dan nilai AR yang baik pada kota berkembang adalah tidak lebih kecil dari 70%. Apabila nilainya lebih kecil dari nilai tersebut, perlu ada penyesuaian baik itu dengan menurunkan harga pasar atau menaikkan NJOP. Perilaku kota Bandung lebih memungkinkan untuk diberlakukan kenaikan nilai NJOP dibandingkan penurunan nilai harga pasar.

Belum pernah ada penelitian terkait pola spasial AR di Bandung sehingga pertama-tama penting untuk diuraikan terlebih dahulu mengenai pola AR di Bandung. Setelah itu, penyesuaian nilai NJOP dilakukan dengan menaikkan nilai berdasarkan analisis matematis yang disesuaikan dengan korelasi dan juga analisis spasial menggunakan GIS. Nilai ini pada kemudian dapat digunakan oleh Bandung untuk pendapatan dan perkembangan kota yang lebih baik. Penelitian ini mengambil studi kasus Ujung Berung sebagai kecamatan yang direncanakan akan mengalami perkembangan pesat. Hasil simulasi menunjukkan 20% kenaikan dari NJOP akan memberikan nilai AR yang baik.

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1. Introduction

Bandung's growth rate is increasing rapidly and its remendous development requires a higher development cost. Revenue stream for regional's development comes from Local Government Original Receipt (LGOR) and Balancing Funds (BF). Due to the fact that government can only maintain and maximizing the LGOR, in order to fulfilled the needs of the development cost, there should be an effort to raising the income from Land and Building Tax (Bahasa : Pajak Bumi dan Bangunan/PBB) and Duty on Land and Building Right Acquisition (Bahasa: Bea Pengalihan Hak Atas Tanah & Bangunan/BPHTB), because they give around 50% part to LGOR (Bapenda Jabar, 2016).

Income from PBB and BPHTB is about stagnant eventhough the land price in Bandung is constantly increasing. Therefore, the difference between market land price and land tax get even bigger. This gap is called Assessment Ratio (AR) and the good AR in development country is around 70% (IAAO, 1999). If the value is smaller than that, there should be an adjustment either for the market land price or the land tax to shrink the value of AR. In Bandung, it is more possible to increase the taxable value of property (Bahasa : Nilai Jual Objek Pajak/NJOP) as the basic value of land tax that are PBB and BPHTB.

This paper attempts to reveal the fact about AR in Bandung and how to adjust the value of NJOP for getting the proper AR. Subdistrict Ujung Berung is being choosen for the study case since it is being planned as an area that will be developed in the future. Since there are no research about the AR pattern in there before, firstly it is important to reveal the fact about AR pattern. After that, the adjustment of AR in Ujung Berung is being done by increasing the value of NJOP by looking at the correlation between AR and land value. The proper value of AR then being counted after determine the right value of correlation between AR annd land value. The value is further can be used to be applied in Ujung Berung Subdistrict for a better income and development.

2. LITERATURE STUDY

2.1 Land Value

Land value is the value of a piece of property, including both the value of the land itself as well as any improvements that have been made to it (Investopedia, 2016). In Indonesia, land value represented in two kind of forms they are tax and market price. For tax, there is PBB for every part of land and building that are being owned and controlled by someone. The value is being determined by the government in a city. The regulation is stated in Law of The Republic Indonesia Number 2008 Year 2009 concerning Local Taxes and Charges. Whereas market price is the value

that is being determined by the negotiation between the seller and buyer of land. The value of market price is being increased from year to year, forced by several factors such as urbanization, the increasing of economics factor and limited sources of land.

2.2 Assessment Ratio (AR)

Assessment Ratio is the comparison between tax and market price. It is used to determine how well the government controlling the land value in a country. Land value for tax in Indonesia is determined from an estimation value called NJOP. Therefore, for counting the AR, NJOP is being compared to the market price by the formula

$$AR = \frac{NJOP}{Market\ Price}$$

with NJOP = Nilai Jual Objek Pajak (the basis value for calculating land tax). The good AR in development country is around 70%. If the value is greater than that, there should be an adjustment either for the market land price or the land tax to shrink the value of AR. In Bandung, it is more possible to increase the Nilai Jual Objek Pajak (NJOP) as the basic value of land tax because Indeks Daya Beli (IDM) is increasing from year to year.

3. MATERIAL AND METHOD

3.1 Material

3.1.1 Market Price and NJOP

Market Price data in 2015 is being collected by the observation from a consultant and it can be seen in Figure 1, while NJOP 2015 is being collected from Disyanjak Bandung as shown in Figure 2.

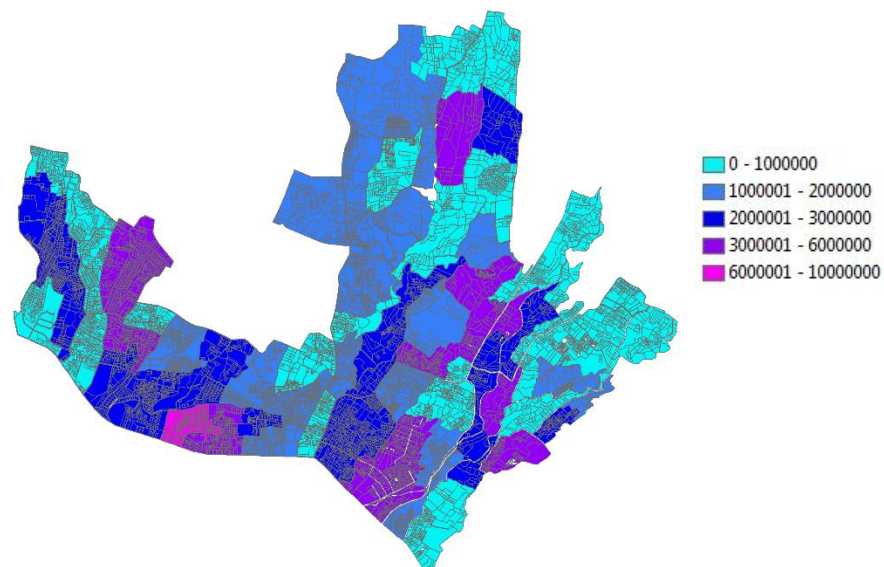


Figure 1. Market Price 2015 in Ujung Berung

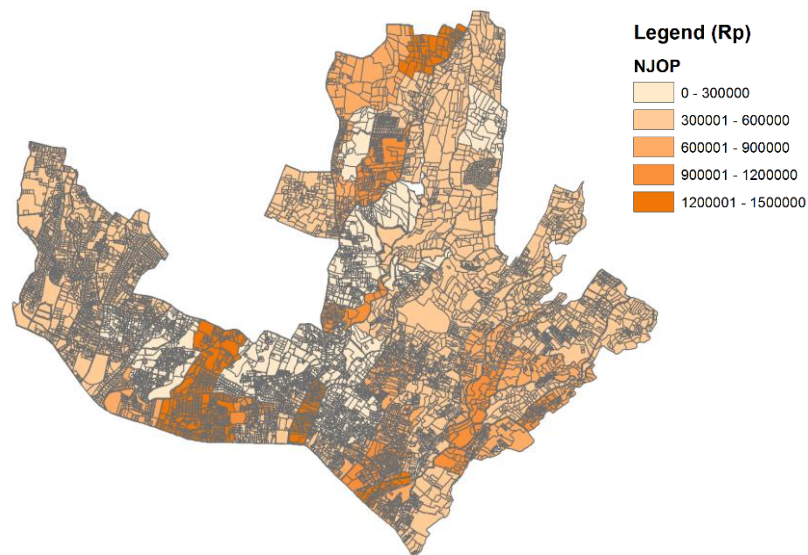


Figure 2. NJOP 2015 in Ujung Berung

3.2 Method

3.2.1 Pearson Correlation

Pearson's correlation coefficient is a statistical measure of the strength of a linear relationship between paired data. In a sample it is denoted by r and is by design constrained as follows

$$1 \geq r \geq -1$$

Furthermore, positive values denote positive linear correlation; negative values denote negative linear correlation; a value of 0 denotes no linear correlation; the closer the value is to 1 or -1 , the stronger the linear correlation. For this research, XLSTAT is being used to know the correlation between AR and NJOP.

3.2.2 NJOP's adjustment

NJOP adjustment will be done using ArcGIS by simulating the increasing value of NJOP started from 20%, 40%, 60 and 80%. Since the value of NJOP should only be increased if the value of AR is smaller than 70%, the value of NJOP from land area that already have the value of AR bigger than 70% will not be change. After that, the correlation between adjusted NJOP and AR will be calculated again. The process is being repeated until there comes the proper value of correlation and the steady pattern of AR.

4. Result and Analysis

4.1 Result

4.1.1 AR Pattern 2015

From NJOP and market price of Ujung Berung in 2015, the value of AR is being calculated and the result can be seen in Figure 3.

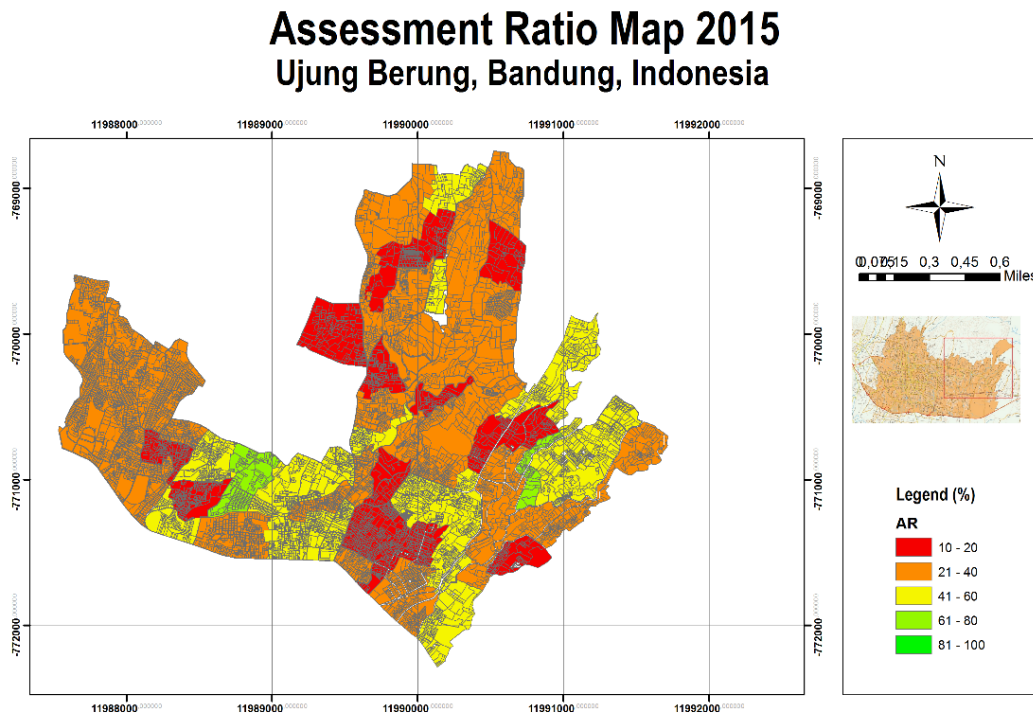


Figure 3. AR Map 2015 of Ujung Berung

From the picture, it can be seen that the value of AR is highly varied. It means the government has not executed their function as the controllers of land value. The market price is much higher than the NJOP. Using XLSTAT, the correlation between AR and NJOP is being calculated. Correlation coefficient is 0.182 and this value shows that the correlation between AR and NJOP is very small, while there should be a correlation between them even though not strong. For small NJOP there should be the small value of market price too and for the higher NJOP there should be the high value of market price. It is not supposed to be precisely linear, but the correlation should be not that small.

4.1.2 Simulation of AR

Adjustment of NJOP is being done in 20%, 40%, 60% and 80% with the schema as written in section 4.2.2. The result for correlation coefficient for those simulation is being shown in Table 1.

Table 1. Pearson Correlation between NJOP's Simulation and AR

Pearson Correlation	Increasement of NJOP from the real value			
	20%	40%	60%	80%
AR	0.652	0.652	0.652	0.652

4.2 Analysis

Surprisingly, the value of Pearson's correlation coefficient is increasing when the NJOP is being increased 20%. Following that fact, the value of Pearson's correlation coefficient is being stagnant when NJOP is being increased 40%, 60% and 80%. This means increasing NJOP's value with 20% is enough because changing the value higher than that won't change anything. With that fact, the spatial pattern for Ujung Berung's AR if the NJOP is being increased by 20% can be seen in Figure 4.

Assessment Ratio Map 2015 Ujung Berung, Bandung, Indonesia

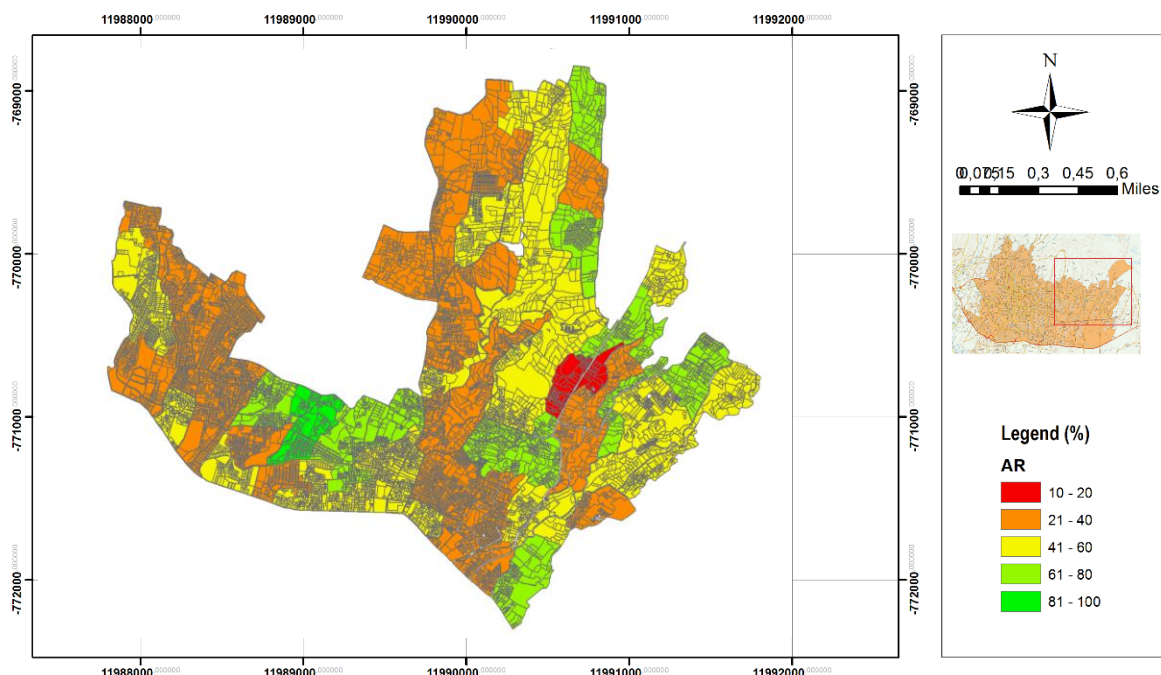


Figure 4. AR Map 2015 of Ujung Berung after NJOP's adjusment

If Figure 3 is being compared with Figure 2, it can be seen that the red colour is reduced and the green colour is increased. Even though there still are red and orange colour, the area is not large as in Figure 2. There is no reason to choose the 40% of increasement because the value of correlation coefficient is still the same. Therefore, this is the best adjusment of NJOP to give a repair to the value of AR in Ujung Berung. Furthermore, the other option to increasing NJOP is

not selected because too much increasement will burdening the people in Ujung Berung. Even though the average value of AR is still smaller than 70%,

5. CONCLUSION

AR pattern in Ujung Berung is still highly varied. For adjusting those value, this research choosed to increasing the value of NJOP for an area that the AR is smaller than 70%. The adjustment is based on the value of correlation coefficient from Pearson's method. After the simulation from increasing the NJOP by 20%, 40%, 60% and 80%, four of them giving the same value of Pearson's correlation coefficient. The correlation is strong since the value is 0.652. As the consequence, 20% increased value of NJOP is being choosed as the best adjustment.

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